

WHAT IS CLAIMED IS:

1 1. An isolated polynucleotide encoding a protein less than about 300
2 amino acids comprising a sequence selected from the group consisting of:
3 (a) sequence provided in SEQ ID NO:3;
4 (b) complements of the sequence provided in SEQ ID NO:3;
5 (c) sequences having at least 90% identity to a sequence of SEQ ID NO:
6 3; and
7 (d) degenerate variants of a sequence provided in SEQ ID NO:3.

1 2. An isolated polypeptide comprising an amino acid sequence selected
2 from the group consisting of:

- 3 (a) sequences encoded by a polynucleotide of claim 1; and
4 (b) sequences having at least 90% identity to a sequence encoded by a
5 polynucleotide of claim 1; and
6 (c) sequences provided in SEQ ID NOs:16-20; and
7 (d) sequences provided in SEQ ID NOs:21-840; and
8 (e) sequences provided in SEQ ID NOs:841-861.

1 3. An expression vector comprising a polynucleotide of claim 1 operably
2 linked to an expression control sequence.

1 4. A host cell transformed or transfected with an expression vector
2 according to claim 3.

1 5. An isolated antibody, or antigen-binding fragment thereof, that
2 specifically binds to a polypeptide of claim 2.

1 6. A method for detecting the presence of a cancer in a patient,
2 comprising the steps of:

- 3 (a) obtaining a biological sample from the patient;
4 (b) contacting the biological sample with a binding agent that binds to a
5 polypeptide of claim 2;
6 (c) detecting in the sample an amount of polypeptide that binds to the
7 binding agent; and

8 (d) comparing the amount of polypeptide to a predetermined cut-off value
9 and therefrom determining the presence of a cancer in the patient.

1 7. A fusion protein comprising at least one polypeptide according to
2 claim 2.

1 8. An oligonucleotide that hybridizes to nucleotides 1-630 of the
2 sequence recited in SEQ ID NO:3 under moderately stringent conditions.

1 9. A method for stimulating and/or expanding T cells specific for a tumor
2 protein, comprising contacting T cells with at least one component selected from the group
3 consisting of:

- 4 (a) polypeptides according to claim 2;
5 (b) polynucleotides according to claim 1; and
6 (c) antigen-presenting cells that express a polypeptide according to claim
7 1,

8 under conditions and for a time sufficient to permit the stimulation and/or expansion of T
9 cells.

1 10. An isolated T cell population, comprising T cells prepared according to
2 the method of claim 9.

1 11. A composition comprising a first component selected from the group
2 consisting of physiologically acceptable carriers and immunostimulants, and a second
3 component selected from the group consisting of:

- 4 (a) polypeptides according to claim 2;
5 (b) polynucleotides according to claim 1;
6 (c) antibodies according to claim 5;
7 (d) fusion proteins according to claim 7;
8 (e) T cell populations according to claim 10; and
9 antigen presenting cells that express a polypeptide according to claim 2.

1 12. A method for stimulating an immune response in a patient, comprising
2 administering to the patient a composition of claim 11.

1 13. A method for the treatment of a cancer in a patient, comprising
2 administering to the patient a composition of claim 11.

1 14. A method for determining the presence of a cancer in a patient,
2 comprising the steps of:

- 3 (a) obtaining a biological sample from the patient;
4 (b) contacting the biological sample with an oligonucleotide according to
5 claim 8;
6 (c) detecting in the sample an amount of a polynucleotide that hybridizes
7 to the oligonucleotide; and
8 (d) comparing the amount of polynucleotide that hybridizes to the
9 oligonucleotide to a predetermined cut-off value, and therefrom
10 determining the presence of the cancer in the patient.

1 15. A diagnostic kit comprising at least one oligonucleotide according to
2 claim 8.

1 16. A diagnostic kit comprising at least one antibody according to claim 5
2 and a detection reagent, wherein the detection reagent comprises a reporter group.

1 17. A method for inhibiting the development of a cancer in a patient,
2 comprising the steps of:

- 3 (a) incubating CD4+ and/or CD8+ T cells isolated from a patient with at
4 least one component selected from the group consisting of: (i)
5 polypeptides according to claim 2; (ii) polynucleotides according to
6 claim 1; and (iii) antigen presenting cells that express a polypeptide of
7 claim 2, such that T cell proliferate;
8 (b) administering to the patient an effective amount of the proliferated T
9 cells,
10 and thereby inhibiting the development of a cancer in the patient.

1 18. An isolated polynucleotide encoding a protein of less than 300 amino
2 acids comprising a sequence selected from the group consisting of:

- 3 (a) sequence provided in SEQ ID NO:6;
4 (b) complements of the sequences provided in SEQ ID NO:6;

- 5 (c) sequences having at least 90% identity to a sequence of SEQ ID NO:
6 6; and
7 (d) degenerate variants of a sequence provided in SEQ ID NO:6.

1 19. An isolated polypeptide comprising an amino acid sequence selected
2 from the group consisting of:

- 3 (a) sequences encoded by a polynucleotide of claim 18; and
4 (b) sequences having at least 90% identity to a sequence encoded by a
5 polynucleotide of claim 18; and
6 (c) the sequence provided in SEQ ID NO:869.

1 20. An expression vector comprising a polynucleotide of claim 18
2 operably linked to an expression control sequence.

21. A host cell transformed or transfected with an expression vector
according to claim 20.

22. An isolated antibody, or antigen-binding fragment thereof, that
specifically binds to a polypeptide of claim 19.

23. A method for detecting the presence of a cancer in a patient,
comprising the steps of:

- (a) obtaining a biological sample from the patient;
(b) contacting the biological sample with a binding agent that binds to a
polypeptide of claim 19;
(c) detecting in the sample an amount of polypeptide that binds to the
binding agent; and
(d) comparing the amount of polypeptide to a predetermined cut-off value
and therefrom determining the presence of a cancer in the patient.

24. A fusion protein comprising at least one polypeptide according to
claim 19.

25. A method for stimulating and/or expanding T cells specific for a tumor
protein, comprising contacting T cells with at least one component selected from the group
consisting of:

- 4 (a) polypeptides according to claim 19;
5 (b) polynucleotides according to claim 18; and
6 (c) antigen-presenting cells that express a polypeptide encoded by a
7 polynucleotide according to claim 18,
8 under conditions and for a time sufficient to permit the stimulation and/or expansion of T
9 cells.

1 26. An isolated T cell population, comprising T cells prepared according to
2 the method of claim 26.

1 27. A composition comprising a first component selected from the group
2 consisting of physiologically acceptable carriers and immunostimulants, and a second
3 component selected from the group consisting of:

- 4 (a) polypeptides according to claim 19;
5 (b) polynucleotides according to claim 18;
6 (c) antibodies according to claim 22;
7 (d) fusion proteins according to claim 24;
8 (e) T cell populations according to claim 27; and
9 antigen presenting cells that express a polypeptide according to claim 19.

1 28. A method for stimulating an immune response in a patient, comprising
2 administering to the patient a composition of claim 28.

1 29. A method for the treatment of a cancer in a patient, comprising
2 administering to the patient a composition of claim 28.

1 30. A diagnostic kit comprising at least one oligonucleotide according to
2 claim 25.

1 31. A diagnostic kit comprising at least one antibody according to claim 22
2 and a detection reagent, wherein the detection reagent comprises a reporter group.

1 32. A method for inhibiting the development of a cancer in a patient,
2 comprising the steps of:

- 3 (a) incubating CD4+ and/or CD8+ T cells isolated from a patient with at
4 least one component selected from the group consisting of: (i)

5 polypeptides according to claim 19; (ii) polynucleotides according to
6 claim 18; and (iii) antigen presenting cells that express a polypeptide
7 of claim 19, such that T cell proliferate;
8 (b) administering to the patient an effective amount of the proliferated T
9 cells,
10 and thereby inhibiting the development of a cancer in the patient.

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